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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/554,028

06/30/2006

Chunquan Chen

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7849

23122 7590 09/10/2009
RATNERPRESTIA
P.O. BOX 980
VALLEY FORGE, PA 19482

EXAMINER

PRYOR, ALTON NATHANIEL

ART UNIT

PAPER NUMBER

1616

MAIL DATE

DELIVERY MODE

09/10/2009

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/554,028	Applicant(s) CHEN ET AL.	
	Examiner ALTON N. PRYOR	Art Unit 1616	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 27 August 2009.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 7,8,14,15 and 17-30 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 7,8,14,15 and 17-30 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Applicant's arguments filed 8/27/09 have been fully considered but they are not persuasive. See discussion below. Previous rejections, objections and other issues not addressed below are withdrawn.

The rejection over WO '778 has not been withdrawn as stated in applicants' RCE filed 8/27/09. There were two 102(b) rejections over WO '778 recited in the non-office action of 9/19/08. However, this was a mistake that was addressed and corrected in the final office action of 6/18/09. The second 102(b) rejection should have been over WO 01/26465 as was corrected in the final office action of 6/18/09. Therefore, the present office action consist of one 102(b) rejection over '778, one 102(b) rejection over '465, one 103(a) rejection over '778 and one 103(a) rejection over '465.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 7,8,14,15,17,21,22 and 26-30 are rejected under 35 U.S.C. 102(b) as being anticipated by Smith et al. (WO 00/04778; 2/3/00). Smith et al. teach a method for promoting the germination of seed and/or seedling emergence and/or the growth plants (e.g. legumes and non-legumes) comprising subjecting the plants to an effective amount of an agricultural composition comprising 10 superscript -5 to 10 superscript -14 M Lipo chitooligosaccharide (LCO) and carrier. See abstract, page 4 lines 21-28, page 7 lines 11-29, page 11 line 11- page 12 line 25,

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page 16 lines 1-8 and Examples 4-6. The application of a plant to LCOs would include contacting the whole plant (foliage and stem) with the LCOs. Smith at page 4 line 20 – page 5 and page 7 lines 3-18 teaches that plants of non-legume plant families such as Poaceae, Malvaceae, Chenopodiaceae, Brassicaceae and Solonaceae (tomatoes) are treated with LCOs. Since both instant invention and Smith teach the same active step of applying LCOs to the plants, it is inherent that both inventions will yield the same result, i.e. the flowering and fruiting of non-legume plants.

Response to Applicants' Argument

The Applicants argue that Smith does not disclose or suggest an effect of LCOs on the flowering, fruiting or yield in nonleguminous plants. The Applicant argues that WO '778 discloses the effect of LCO seed treatment on germination of seeds and seedling emergence and growth in leguminous plants. WO '778 does not teach foliar treatment of any nonleguminous plant. The Examiner argues that Smith at page 4 line 20 – page 5 and page 7 lines 3-18 teaches that plants of non-legume plant families such as Poaceae, Malvaceae, Chenopodiaceae, Brassicaceae and Solonaceae are treated with LCOs. WO '778 does not explicitly state that LCO is applied to plant foliage. However, WO '778 does state the plants and crop are treated with LCO. From such a statement, it can be deduced that LCO is applied to the total plant including the plant's foliage. Since both instant invention and Smith teach the same active step of applying LCOs to the plants, it is inherent that both inventions will yield the same result, i.e. the flowering and fruiting of non-legume plants.

Claims 7,8,14,15,17,21,22 and 26-29 are rejected under 35 U.S.C. 102(b) as being anticipated by Smith et al. (WO 01/26465; 4/19/01). Smith et al. teach a method for increasing

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photosynthesis and/or yield plants (e.g. legumes and non-legumes) comprising exposing the plant leaves to an effective amount of an agricultural composition comprising 10^{superscript -5} to 10^{superscript -14} M Lipo chito-oligosaccharide (LCO) plus carrier. See abstract, page 5 line 20 – page 7 line 24, page 10 lines 4-10, page 15 lines 9-23, page 18 line 3 – page 19 line 7, Examples 3,5,6 and table 3,6. The exposure of a plant to LCOs would include contacting the whole plant (foliage and stem) with the LCOs. Smith at page 4 line 20 – page 5 and page 7, page 6 lines 3-13, page 7 lines 10-24, and page 8 line 2 – page 9 line 13 teaches that plants of non-legume plant families such as Poaceae, Malvaceae, Chenopodiaceae, Brassicaceae and Solonaceae are treated with LCOs. Since both instant invention and Smith teach the same active step of applying LCOs to the plants, it is inherent that both inventions will yield the same result, i.e. the flowering and fruiting of non-legume plants.

Response to Applicants' Argument

The Applicants argue that Smith is to a method for increasing photosynthesis and/or plant yield and does not disclose or suggest an effect of LCOs on the flowering, fruiting or yield in nonleguminous plants. The Examiner argues that Smith at page 4 line 20 – page 5 and page 7, page 6 lines 3-13, page 7 lines 10-24, and page 8 line 2 – page 9 line 13 teaches that plants of non-legume plant families such as Poaceae, Malvaceae, Chenopodiaceae, Brassicaceae and Solonaceae are treated with LCOs. Since both instant invention and Smith teach the same active step of applying LCOs to the plants, it is inherent that both inventions will yield the same result, i.e. the flowering and fruiting of non-legume plants. Although Smith's method impacts photosynthesis, the Smith method teaches the same active step as the instant claims; thus, the same active step in Smith and instant claims will yield the same result.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 18-20,23-25 and 30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Smith et al. (WO 00/04778; 2/3/00) or Smith et al. (WO 01/26465; 4/19/01) as applied to claims 7,8,14,15,17,21,22 and 26-30. See 102(b) rejection above. The references teach all that is recited in claims 18-20,23-25 and 30 except for the administration of the ng amount of LCO to the plant or the treatment of tomato plants with LCO. In the absence of unexpected results for the claim concentration range, it is well within the skill of an artisan in the field to determine the optimum concentration. One would have been motivated to do this in order to gain proper and healthy maturation of the plant. One would have been expected to treat tomato plants with LCO since the tomato plants are species in the Solonaceae plant genus.

The Applicants argue that Smith does not disclose or suggest an effect of LCOs on the flowering, fruiting or yield in nonleguminous plants. The Applicant argues that WO '778 discloses the effect of LCO seed treatment on germination of seeds and seedling emergence and growth in leguminous plants. WO '778 does not teach foliar treatment of any nonleguminous plant. The Examiner argues that Smith at page 4 line 20 – page 5 and page 7 lines 3-18 teaches that plants of non-legume plant families such as Poaceae, Malvaceae, Chenopodiaceae, Brassicaceae and Solonaceae are treated with LCOs. WO '778 does not explicitly state that LCO is applied to plant foliage. However, WO '778 does state the plants and crop are treated

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with LCO. From such a statement, it can be deduced that LCO is applied to the total plant including the plant's foliage. Since both instant invention and Smith teach the same active step of applying LCOs to the plants, it is inherent that both inventions will yield the same result, i.e. the flowering and fruiting of non-legume plants.

Claims 18-20 and 23-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Smith et al. (WO 01/26465; 4/19/01). The references teach all that is recited in claims 18-20, 23-25 and 30 except for the administration of the ng amount of LCO to the plant. In the absence of unexpected results for the claim concentration range, it is well within the skill of an artisan in the field to determine the optimum concentration. One would have been motivated to do this in order to gain proper and healthy maturation of the plant.

Response to Applicants' Argument

The Applicants argue that Smith does not disclose or suggest an effect of LCOs on the flowering, fruiting or yield in nonleguminous plants. The Examiner argues that Smith at page 4 line 20 – page 5 and page 7, page 6 lines 3-13, page 7 lines 10-24, and page 8 line 2 – page 9 line 13 teaches that plants of non-legume plant families such as Poaceae, Malvaceae, Chenopodiaceae, Brassicaceae and Solonaceae are treated with LCOs. Since both instant invention and Smith teach the same active step of applying LCOs to the plants, it is inherent that both inventions will yield the same result, i.e. the flowering and fruiting of non-legume plants.

Telephonic Inquiry

Any inquiry concerning this communication or earlier communications from the examiner should be directed to ALTON N. PRYOR whose telephone number is (571)272-0621. The examiner can normally be reached on 8:00 a.m. - 4:30 p.m..

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Johann Richter can be reached on 571-272-0646. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Alton N. Pryor/
Primary Examiner, Art Unit 1616